

### REMARKS

Claims 1-11 are pending in the present application. Claims 1 and 11 have been amended as a result of this response. Applicant respectfully submits that independent claims 1 and 11 and dependent claims 2-10 stand in condition for allowance. No claims have been canceled and no new claims have been added.

#### I. Claim Rejections Under 35 U.S.C. § 101

The Examiner has rejected claim 11 under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. This rejection is respectfully traversed. Specifically the Examiner alleges that claim 11 is directed to information on a medium that “does not provide any functional interrelationship to the medium to control the medium or access the information on the medium, or impart to any software and hardware structural components to provide certain function that is processed by a computer, the information themselves do not make them statutory.”

Amended claim 11 is directed to a video image file that contains “video data representing a plurality of continuous still images photographed by a photographing device” and “attendant data representing an image service corresponding to processing of the still images included in the video data” which provide functional interrelationships to the recording medium in which “the image service is at least one of forming a still image, recording the video image file, distributing a still image or the video data, or editing the video data.”

Applicant submits that Applicant’s claim does reference some non-functional descriptive materials in the form of specific data (information). However, Applicant is not claiming non-functional descriptive material by itself, Applicant is claiming a recording medium including the specific relationship of segments of the recording medium to the stored data. This is statutory as it relates a structural and functional interrelationship between the non-functional descriptive material segments of the recording medium and the data creating a statutory process.

As stated in M.P.E.P. 2106.01 (II)

“the presence of the claim non-functional descriptive material is not necessarily determinative of non-statutory subject matter. For example, a

computer that recognizes a particular grouping or sequence of musical notes read from memory and thereafter causes another defined series of notes to be played, requires a functional interrelationship among that data and the computing process is performed when utilizing that data. As such a claim to that computer is statutory subject matter because it implements a statutory process.”

Note that the mere existence of non-functional descriptive materials does not define the claim as being directed to non-statutory subject matter. The inter-relationship between the non-functional descriptive material and its relationship to the claimed segments should be taken into consideration.

As further evidence of the statutory nature of the claim as presently recited, Applicant refers the Examiner to the Decision by the Board of Appeals and Interferences for application 09/211,928<sup>1</sup>. In this decision the Board of Patent Appeals and Interferences overturned the Examiners rejection of claim 15 under §101, which recites a storage medium containing a signal. Claim 15 is represented below:

15. A storage medium having stored thereon a signal with embedded supplemental data, the signal being encoded in accordance with a given encoding process and selected samples of the signal representing the supplemental data, and at least one of the samples preceding the selected samples is different from the sample corresponding to the given encoding process.

In regards to claim 15, the Board of Appeals and Interferences stated the following in its Decision.

Claim 15 recites “a storage medium having stored thereon a signal with embedded supplemental data.” This claim depends on the distinction between “functional descriptive material” and “nonfunctional descriptive material” described in MPEP § 2106 IV .B.I. “Nonfunctional descriptive material’ includes but is not limited to music, literary works and a compilation or mere arrangement of data.” Id. While the signal may represent “nonfunctional descriptive material, “music or a movie, claim 15 is not trying to claim the content of the material itself. (emphasis added)

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<sup>1</sup> Appeal No. 2003-0853

The storage medium in claim 15 nominally puts the claim into the statutory category of a “manufacture” and the signal is “functional” because it can be used by a machine to produce a useful result, as with the “data structure stored in memory” in Lowry. Accordingly, we conclude that claim 15 is statutory subject matter. The rejection of claim 15 is reversed.

Claim 15 is deemed statutory by the Board of Appeals and Interferences because it is not claiming the content of the nonfunctional descriptive material itself and is stored in a storage medium. Applicant’s claim is also not claiming the content of the nonfunctional descriptive material itself but instead a recording medium storing the data. Further, Applicant’s claim incorporates such data in a structural arrangement within the recording medium, where the recording medium is structurally defined, as discussed above, which provides even more relationship between structure and the material than claim 15 of application 09/211,928 deemed statutory by the Board.

Applicant does not understand the Examiner’s assertion that the claim is directed to non-statutory subject matter and clearly under the U.S.P.T.O.’s own guidelines and in view of applicable law the claims are statutory. The Examiner upon reading the claim carefully in considering the elements separately and their relationship to each other and in view of the Boards precedence will clearly see that the claims are statutory as presently recited.

Reconsideration and withdrawal of the Examiner’s rejection under 35 U.S.C. §101 are therefore respectfully requested.

## II. Claim Rejections Under 35 U.S.C. § 102(b)

The Examiner has rejected claims 1-11 under 35 U.S.C. § 102(e) as being anticipated by Schuetzle et al. (U.S. 6762791). This rejection is respectfully traversed.

Schuetzle et al. teaches a portable image capture device (30) for a still image or a video (column 4, lines 26-29) that associates a captured image with attributes (Figs. 2-6). The device includes an attribute program segment that provides one or more data processing attribute associated with an image file generated for image data captured by the portable image capture device (column 5, lines 24-27). The attributes are transmitted to a data processing system (20) to

use in general image file processing such as sorting, routing, etc. (column 9, lines 30-45, and Fig. 8).

The present invention is directed to an image service providing apparatus and recording medium which provide an image service related to video data (specification page 1, lines 10-15). The image service provides an input unit for inputting a video image file obtained by adding, to video data representing a plurality of continuous still images photographed by a photographing device and attendant data representing an image service corresponding to processing for the still images included in the video data (specification page 4, lines 3-14 and claim 1). In addition, the image service performs at least one of forming a still image, recording the video image file, distributing a still image or the video data, or editing the video data (specification page 7, lines 4-5, Fig. 1, and claims 1 and 11).

Schuetzle fails to teach "an image service corresponding to processing for the still images included in the video data" (claim 1) or "an image service corresponding to processing of the still images included in the video data" (claim 11). Further, Schuetzle does not teach an image service which is at least one of "forming a still image, recording the video image file, distributing a still image or the video data, or editing the video data" (claims 1 and 11).

Applicant submits that claims 1 and 11 stand in condition for allowance and claims 2-10 are allowable at least by virtue of their dependency on claim 1. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

#### Conclusion

All matters having been addressed in view of the foregoing, Applicant respectfully requests the entry of this Amendment, the Examiner's reconsideration of this application, and the immediate allowance of all pending claims.

In view of the above remarks, it is believed that claims are allowable.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact D. Richard Anderson Reg. No. 40,439 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

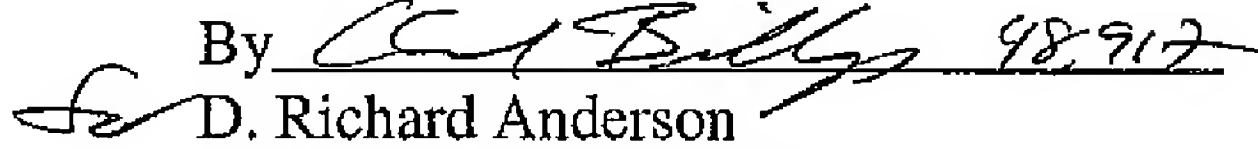
Application No. 10/670,423  
Amendment dated March 5, 2008  
Reply to Office Action of November 5, 2007

Docket No.: 1982-0204P

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

Dated: March 5, 2008

Respectfully submitted,

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The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 20

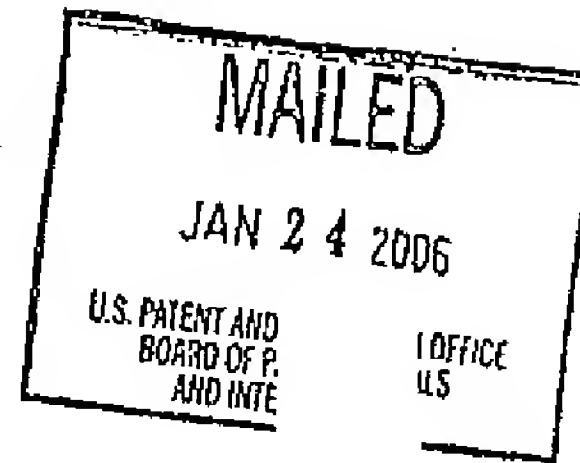
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Ex parte PETRUS A.C.M. NUIJTEN

Appeal No. 2003-0853  
Application 09/211,928<sup>1</sup>

ON BRIEF



HAIRSTON, BARRETT, and MacDONALD, Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 1, 5, 6, and 11-24. Claims 2-4 and 7-10 are objected to.

We affirm-in-part.

<sup>1</sup> Application for patent filed December 15, 1998, entitled "Embedding Supplemental Data in an Encoded Signal," which claims the foreign filing priority benefit under 35 U.S.C. § 119 of European Patent Office (EPO) Application 97204056.2, filed December 22, 1997.

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#### REFERENCES

The examiner relies on the following references:

Bender et al. (Bender)	5,689,587	November 18, 1997
Bruekers et al. (Bruekers)	6,157,330	December 5, 2000
		(filed January 26, 1998)

#### THE REJECTIONS

Claims 14, 15, and 22-24 stand rejected under 35 U.S.C.  
§ 101 as being directed to nonstatutory subject matter.

Claims 1, 5, 6, and 11-24 stand rejected under the  
judicially created doctrine of obviousness-type double patenting  
over claims 1-3, 8, 10, 11, 12, 15, 17, and 19-25 of Bruekers in  
view of Bender.

We refer to the final rejection (Paper No. 11) (pages  
referred to as "FR\_\_") and the examiner's answer (Paper No. 16)  
(pages referred to as "EA\_\_") for a statement of the examiner's  
rejection, and to the brief (Paper No. 15) (pages referred to as  
"Br\_\_") and reply brief (Paper No. 17) (pages referred to as  
"RBr\_\_") for a statement of appellant's arguments thereagainst.

#### OPINION

##### Nonstatutory subject matter

The examiner states that the claims are directed to  
nonstatutory subject matter because (FR3): "The recitation of the  
data characteristics of a signal is not a practical application  
within the technological arts. The recited characteristics are a



BACKGROUND

The invention relates to a method and arrangement for embedding supplemental data in a signal, a signal with embedded supplemental data, and a storage medium having stored thereon a signal with embedded supplemental data.

Claims 1, 14, and 15 are reproduced below.

1. A method of embedding supplemental data in a signal, comprising the steps of:

encoding the signal in accordance with an encoding process which includes the step of feeding back the encoded signal to control the encoding; and modifying selected samples of the encoded signal to represent the supplemental data prior to the feedback of the encoded signal and including the modifying of at least one further sample of the encoded signal preceding the selected sample if the further sample modification is found to improve the quality of the encoding process.

14. A signal with embedded supplemental data, the signal being encoded in accordance with a given encoding process and selected samples of the signal representing the supplemental data, and at least one of the samples preceding the selected samples is different from the sample corresponding to the given encoding process.

15. A storage medium having stored thereon a signal with embedded supplemental data, the signal being encoded in accordance with a given encoding process and selected samples of the signal representing the supplemental data, and at least one of the samples preceding the selected samples is different from the sample corresponding to the given encoding process.



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description of the signal itself and not a process that can be performed by a computer when imparted with the requisite functionality."

Appellant argues that the examiner has not provided any reference or other support for his position and without such reference or other support, the rejection is legally insufficient and thus improper (Br4). It is noted that MPEP § 2106 IV.B.1(c) states that "a signal claim directed to a practical application is statutory regardless of its transitory nature." Appellant argues that the signal is humanly designed and cannot be considered a nonstatutory natural phenomenon (Br4). It is argued that the signal is directed to a practical application (Br5).

The examiner responds that (EA3): (1) "[T]he claims are directed to a signal and not a process"; (2) "Even if the process is statutory, by claiming the signal per se, applicant is seeking to patent an abstract idea or a form of an abstract idea.... The signal claimed is a representation of an abstract idea. It is an idea of how to describe an abstract manipulation."; (3) "The claims do not seek the protection of a physical product or manufacture, but the idea expressed by the term 'signal with embedded supplemental data.'"; and (4) "The signal does not represent functional descriptive language that if imparted to a computer would cause a computer to implement a process or become a specialized machine."

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Appellant replies that arguments (2) and (3) are new grounds of rejection which are improper, but appellant nevertheless replies to all four arguments. It is argued that argument (1) is not an argument but rather a restatement of the issue (RBr3). It is argued with respect to argument (2) that a signal is not abstract, but "[s]aid signal comprises energy, is detectable, and measurable ... [and] is as physical and tangible as a table or a baseball" (RBr4) and is not naturally occurring. It is argued with respect to argument (3) that "the signal of claims 14 and 15 is not an idea but is tangible, detectable, measurable, and humanly created" (RBr4). It is argued with respect to argument (4) that the examiner has not provided any reference or other support for his contention (RBr4). Appellant again asserts that the relevant criterion is that "a signal claim directed to a practical application is statutory regardless of its transitory nature," MPEP § 2106 IV.B.1(c).

Claims 14 and 22-24

First, we must interpret the claims. Claim 14 is directed to a "signal" having certain characteristics. A man-made signal represents coded information. A signal can be an abstract quantity describing the information or a physical quantity (e.g., the fluctuations of an electrical quantity, such as voltage), which can be measured. See In re Walter, 618 F.2d 758, 770,

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205 USPQ 397, 409. (CCPA 1980) ("The 'signals' processed by the inventions of claims 10-12 may represent either physical quantities or abstract quantities; the claims do not require one or the other"). The signal of claim 14 is not recited to have any specific physical form, i.e., it is not expressly or impliedly an electrical or electromagnetic signal or a signal transmitted or stored in a physical medium. The signal could simply be a string of +1 and -1 sample values representing an encoded signal z, e.g., -1, +1, -1, +1, +1, -1, etc. for the encoded signal z in appellant's Fig. 4, but the representation of the signal is not claimed. Claim 14 merely recites the abstract properties of the signal. Appellant's assertion that "[s]aid signal comprises energy, is detectable, and measurable ... [and] is as physical and tangible as a table or a baseball" (RBr4) is not supported by any claim limitations.

The same interpretation applies to claim 22, which merely defines the data. Claim 23 recites that "the signal is a video signal" and claim 24 recites that "the signal is an audio signal." The terms "video" and "audio" are considered statements of intended use for the signal and while the terms imply some additional formatting for use in video and audio devices, they do not clearly specify any physical properties. In any case, it is not clear that a physical signal per se is patentable.

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We conclude that the signal of claims 14 and 22-24 is nonstatutory subject matter because (1) it is an abstract idea, and (2) it does not fall within one of the four statutory categories of subject matter under 35 U.S.C. § 101. These roughly correspond to the examiner's arguments (2) and (3), respectively. The examiner's refers to "technological arts," but technological arts is not a separate test for statutory subject matter. See Ex parte 76 USPQ2d 1385 (Bd. Pat. App. & Int. 2005). This not to say that there are no limits on patentable subject matter. See id. at 1389-1432 (APJ Barrett, concurring-in-part and dissenting-in-part) (inventions protected under the "useful arts" of the Constitution are specified by Congress in the classes of § 101, as those classes are defined by the caselaw, not by some undefined "technological arts" test).

#### Abstract idea

One of the three judicially recognized exceptions is an "abstract idea." Diamond v. Diehr, 450 U.S. 175, 185, 209 USPQ 1, 7 (1981). The signal of claims 14 and 22 has no physical attributes and merely describes the abstract characteristics of the signal and, thus, it is considered an "abstract idea." Claim 23, which recites that "the signal is a video signal," and claim 24, which recites that "the signal is an audio signal," are interpreted as reciting the type of

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information contained in the signal, video or audio, and not any particular physical properties, such as an electrical signal. Accordingly, the signal of claims 14 and 22-24 is nonstatutory subject matter as an "abstract idea."

Not within a § 101 category

The categories of statutory subject matter are "process, machine, manufacture, or composition of matter." 35 U.S.C.

§ 101. "[N]o patent is available for a discovery, however useful, novel, and nonobvious, unless it falls within one of the express categories of patentable subject matter of 35 U.S.C.

§ 101." Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470, 483, 181 USPQ 673, 679 (1974).

A "process" is a series of acts and, since claim 14 does not recite acts, it is not a process.

The three product classes of machine, manufacture, and composition of matter have traditionally required physical structure or substance. "The term machine includes every mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result." Corning v. Burden, 56 U.S. 252, 267 (1854); see also Burr v. Duryee, 68 U.S. 531, 570 (1863) (a machine is a concrete thing, consisting of parts or of certain devices and combinations of devices). In modern parlance, electrical circuits and devices,

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such as computers, are referred to as machines. The signal of claim 14 has no concrete tangible physical structure, and does not itself perform any functions that produce useful, concrete and tangible results. Therefore, a signal does not fit within the definition of a "machine."

A "manufacture" and a "composition of matter" are defined in Diamond v. Chakrabarty, 447 U.S. 303, 308, 206 USPQ 193, 196-97 (1980):

[T]his Court has read the term "manufacture" in accordance with its dictionary definition to mean "the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties, or combinations, whether by hand-labor or by machinery." American Fruit Growers, Inc. v. Broddex Co., 283 U.S. 1, 11 (1931). Similarly, "composition of matter" has been construed consistent with common usage to include "all compositions of two or more substances and ... all composite articles, whether they be results of chemical union, or of mechanical mixture, or whether they be gases, fluids, powders or solids." Shell Development Co. v. Watson, 149 F. Supp. 279, 280 (D.C. 1957) (citing 1 A. Deller, Walker on Patents § 14, p. 55 (1st ed. 1937)). [Parallel citations omitted.]

The signal is not composed of matter and is clearly not a "composition of matter."

A "manufacture" is the residual category for products.

1 Chisum, Patents § 1.02[3] (2004) (citing W. Robinson, The Law of Patents for Useful Inventions 270 (1890)). If a signal falls within any category of § 101, it must fall within this category. The definition of "manufacture" from Diamond v. Chakrabarty requires a tangible article prepared from materials. The other

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cases dealing with manufactures also require a tangible physical article. The CCPA held in In re Hruby, 373 F.2d 997, 153 USPQ 61 (CCPA 1967) that there was no distinction between the meaning of "manufacture" in § 101 and "article of manufacture" in § 171 for designs. The issue in Hruby was whether that portion of a water fountain which is composed entirely of water in motion was an article of manufacture. The CCPA relied on the analysis of the term "manufacture" in Riter-Conley Mfg. Co. v. Aiken, 203 F. 699 (3d Cir.), cert. denied, 229 U.S. 617 (1913), a case involving a utility patent. The CCPA stated in Hruby:

The gist of it is, as one can determine from dictionaries, that a manufacture is anything made "by the hands of man" from raw materials, whether literally by hand or by machinery or by art.

373 F.2d at 1000, 153 USPQ at 65. The CCPA held that the fountain was made of the only substance fountains can be made of--water--and determined that designs for water fountains were statutory. Articles of manufacture in designs manifestly require physical matter to provide substance for embodiment of the design. Since an "article of manufacture" under § 171 has the same meaning as a "manufacture" under § 101, it is inevitable that a manufacture under § 101 requires physical matter.

Some further indirect evidence that Congress intended to limit patentable subject matter to physical things and steps is found in 35 U.S.C. § 112, sixth paragraph, which states that an



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element in a claim for a combination may be expressed as a "means or step" for performing a function and will be construed to cover the corresponding "structure, material, or acts described in the specification and equivalents thereof." "Structure" and "material" indicate tangible things made of matter, not energy.

The signal of claim 14 does not have any physical structure or substance and does not fit the definition of a "manufacture" which requires a tangible object. The signal of claims 14 and 22-24 is considered an "abstract idea," as discussed supra. The more interesting question is presented with respect to dependent claims 23 and 24, to the extent these claims might be construed to imply an electrical signal: Is a physical electrical signal, not embodied or stored in a tangible medium, a "manufacture"? An electrical signal does not fit the Diamond v. Chakrabarty definition of a manufacture because it is not an object prepared from material and, thus, the answer seems to be that a signal, even if claimed as a measurable physical quantity, such as a voltage, is not patentable. See In re Bonczyk, 10 Fed. Appx. 908 (Fed. Cir. 2001) (unpublished) ("fabricated energy structure" does not correspond to any statutory category of subject matter and it is unnecessary to reach the alternate ground of affirmance that the subject matter lacks practical utility). This analysis is consistent with the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility,

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1300 Off. Gaz. Patent and Trademark Off. (O.G.) 142, 152  
(Nov. 22, 2005), in the section entitled "Electro-Magnetic  
Signals." Rather than invent reasons why this different type of  
subject matter may be statutory and open up a whole new type of  
subject matter for patenting, we leave it to our reviewing court,  
the U.S. Court of Appeals for the Federal Circuit to make this  
decision. In summary, the signal of claims 14 and 22-24 is also  
unpatentable subject matter because it does not fall within any  
category of § 101.

Appellant relies on the following statement in MPEP § 2106  
IV.B.1(c) (8th ed., Rev. 1, Feb. 2003): "However, a signal claim  
directed to a practical application of electromagnetic energy is  
statutory regardless of its transitory nature. See *O'Reilly*,  
56 U.S. at 114-19; *In re Breslow*, 616 F.2d 516, 519-21,  
205 USPQ 221, 225-26 (CCPA 1980)." To the extent this statement  
suggests that a claim to a signal per se is statutory subject  
matter, it is in error. Neither *O'Reilly v. Morse* nor *Breslow*  
are to the contrary: *O'Reilly* was to a method and *Breslow* was to  
a chemical composition of matter. It is noted that the rejection  
in this case is based principally on the fact that the signal, as  
claimed, is abstract and is not recited to be an electromagnetic  
signal or a signal stored in a physical medium. Nevertheless, we  
hold that an electrical signal per se does not fit within any of  
the statutory categories of 35 U.S.C. § 101 until told otherwise

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by the Federal Circuit. As to the statement in the MPEP, the MPEP is a manual of examining procedure and its legal interpretations of the case law are not binding on the Board. The practical application of a signal in a process or manufacture may be statutory, but here the claims recite a signal per se.

The assignee of this application should be familiar with the signal analysis. A rejection of a signal per se was affirmed by the Board in Koo, U.S. Patent 5,568,202, issued October 22, 1996, and assigned to U.S. Philips, the assignee of the present application. In Koo, after a premature appeal to the Federal Circuit, the claims were allowed after the claim was amended to recite "wherein said reference signal is embodied in a processor readable memory" following the holding in In re Lowry, 32 F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994), wherein claims to a data structure stored in memory were held to be statutory subject matter. No memory or other physical structure is claimed here and our decision is not controlled by Lowry.

As to the examiner's statement that "[t]he signal does not represent functional descriptive language that if imparted to a computer would cause a computer to implement a process or become a specialized machine" (EA3). This is apparently a reference to the distinction between "functional descriptive material" and "nonfunctional descriptive material" in MPEP § 2106 IV.B.1. This

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rationale is relevant to claim 15, but is not necessary for claim 14, which does not recite a memory or storage medium.

Claim 15

Claim 15 recites "a storage medium having stored thereon a signal with embedded supplemental data." This claim depends on the distinction between "functional descriptive material" and "nonfunctional descriptive material" described in MPEP § 2106 IV.B.1. "'Nonfunctional descriptive material' includes but is not limited to music, literary works and a compilation or mere arrangement of data." Id. While the signal may represent "nonfunctional descriptive material," music or a movie, claim 15 is not trying to claim the content of the material itself. The storage medium in claim 15 nominally puts the claim into the statutory category of a "manufacture" and the signal is "functional" because it can be used by a machine to produce a useful result, as with the "data structure stored in memory" in Lowry. Accordingly, we conclude that claim 15 is statutory subject matter. The rejection of claim 15 is reversed.

Obviousness-type double patenting

The examiner finds that assignee's patent to Bruekers claims the claimed invention except for the limitation of modifying at least one further sample of the encoded signal preceding the selected sample if the further sample modification is found to

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improve the quality of the encoding process and the limitation that at least one of the samples preceding the selected samples is different from the sample corresponding to the given encoding process (FR3-4). The examiner finds that Bender teaches a method and apparatus for hiding data wherein samples preceding the selected samples are modified in order to improve the quality of the encoding process at column 2, lines 35-46 (Br4).

Appellant presents numerous arguments in response (Br7-20).

The examiner responds (EA5):

The patent to Bender teaches the modification of the samples around or preceding the location where the watermark is introduced, see column 8, lines 25-39, referring to Figure 2. The Bender patent teaches the modification of samples preceding (around) the selected samples improves the quality of the encoding process, i.e., the ability to hide a watermark, see [sic] column 1, lines 27-38.

Appellant presents numerous arguments in rebuttal (RBr8-11).

Appellant's argument that the examiner did not identify a specific claim in Bruekers against the independent claims of this application (Br8-10), while true, is not the kind of argument that is persuasive given that appellant is a co-inventor on Bruekers and is presumed to be familiar with what is claimed and the fact that the examiner identified what was not taught. The claims are not complex and it takes little time to determine that claim 1 or claim 22 in Bruekers discloses the limitations of the independent claims of the present application except for modifying a further sample of the encoded signal preceding the

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selected sample (claims 1 and 11) or at least one of the samples preceding the selected samples is different from the sample corresponding to the given encoding process (claims 14 and 15). The limitations of claims 5, 6, 12, and 13 of the present application are found in claims 2 and 3 of Bruekers. Appellant's argument has merit for some dependent claims of the present case, such as claims 16, 19, and 22, which recite the "supplemental data includes a portion of a watermark data pattern," and claims 17, 18, 20, 21, 23, and 24, which recite that the signal is an audio or video signal, because these limitations are not found in the claims in Bruekers and the examiner has not attempted to explain why the limitations would have been obvious.

We agree with appellant that Bender does not disclose modifying a further sample of the encoded signal preceding the selected sample (claims 1 and 11) or that at least one of the samples preceding the selected samples is different from the sample corresponding to the given encoding process (claims 14 and 15). It appears that the examiner interprets the claim term "preceding" to be taught by the modification of samples "around" the selected samples in Bender. This is not the encoding of a signal with feedback and modification of a sample preceding the selected sample called for in the claims. An electrical signal is a one-dimensional entity, e.g., it has a unique value (voltage, frequency, or, in the present case a value of +1 or -1)

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as a function of time. Bender is directed to embedding supplemental data in a two dimensional image. While the image will be encoded somehow for transmission, the method of encoding is not disclosed. The term "preceding" has meaning for a signal which is a function of time but is meaningless for an image; it does not equate to "around" in a two-dimensional image.

Certainly, there is no way the unity bit encoding or sigma-delta modulation of, for example, claims 5 and 6 makes any sense for Bender. Thus, the examiner has failed to establish a prima facie case of obviousness-type double patenting. The rejection of claims 1, 5, 6, and 11-24 is reversed.



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CONCLUSION

The rejection of claims 14 and 22-24 under 35 U.S.C. § 101 is sustained. The rejection of claim 15 under § 101 is reversed.


The rejection of claims 1, 5, 6, and 11-24 based on obviousness-type double patenting is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1). See 37 CFR § 1.136(a)(1)(iv) (2004).

AFFIRMED-IN-PART

  
KENNETH W. HAIRSTON  
Administrative Patent Judge

  
LEE E. BARRETT  
Administrative Patent Judge

  
ALLEN R. MacDONALD  
Administrative Patent Judge

BOARD OF PATENT  
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Appeal No. 2003-0853  
Application 09/211,928

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ADDENDUM – USPTO Interim Guidelines for  
Examination of Patent Applications for Subject Matter Eligibility –  
Annex IV(c)

(c) Electro-Magnetic Signals

Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. *O'Reilly*, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in Sec. 101.

First, a claimed signal is clearly not a "process" under Sec. 101 because it is not a series of steps. The other three Sec. 101 classes of machine, compositions of matter and manufactures "relate to structural entities and can be grouped as 'product' claims in order to contrast them with process claims." 1 D. Chisum, *Patents* Sec. 1.02 (1994). The three product classes have traditionally required physical structure or material.

"The term machine includes every mechanical device or combination of mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result." *Corning v. Burden*, 56 U.S. (15 How.) 252, 267 (1854). A modern definition of machine would no doubt include electronic devices which perform functions. Indeed, devices such as flip-flops and computers are referred to in computer science as sequential machines. A claimed signal has no physical structure, does not itself perform any useful, concrete and tangible result and, thus, does not fit within the definition of a machine.

A "composition of matter" "covers all compositions of two or more substances and includes all composite articles, whether they be results of chemical union, or of mechanical mixture, or whether they be gases, fluids, powders or solids." *Shell Development Co. v. Watson*, 149 F. Supp. 279, 280, 113 USPQ 265, 266 (D.D.C. 1957), *aff'd*, 252 F.2d 861, 116 USPQ 428 (D.C. Cir. 1958). A claimed signal is not matter, but a form of energy, and therefore is not a composition of matter.

The Supreme Court has read the term "manufacture" in accordance with its dictionary definition to mean "the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties, or combinations, whether by hand-labor or by machinery." *Diamond v. Chakrabarty*, 447 U.S. 303, 308, 206 USPQ 193, 196-97 (1980) (quoting *American Fruit Growers, Inc. v. Brogdex Co.*, 283 U.S. 1, 11, 8 USPQ 131, 133 (1931), which, in turn, quotes the *Century Dictionary*). Other courts have applied similar definitions. See *American Disappearing Bed Co. v. Arnaelsteen*, 182 F. 324, 325 (9th Cir. 1910), *cert. denied*, 220 U.S. 622 (1911). These definitions require physical substance, which a claimed signal does not have. Congress can be presumed to be aware of an administrative or judicial interpretation of a statute and to adopt that interpretation when it re-enacts a statute without change. *Lorillard v. Pons*, 434 U.S. 575, 580

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(1978). Thus, Congress must be presumed to have been aware of the interpretation of manufacture in American Fruit Growers when it passed the 1952 Patent Act.

A manufacture is also defined as the residual class of product. 1 Chisum, Sec. 1.02[3] (citing W. Robinson, The Law of Patents for Useful Inventions 270 (1890)). A product is a tangible physical article or object, some form of matter, which a signal is not. That the other two product classes, machine and composition of matter, require physical matter is evidence that a manufacture was also intended to require physical matter. A signal, a form of energy, does not fall within either of the two definitions of manufacture. Thus, a signal does not fall within one of the four statutory classes of Sec. 101.

On the other hand, from a technological standpoint, a signal encoded with functional descriptive material is similar to a computer-readable memory encoded with functional descriptive material, in that they both create a functional interrelationship with a computer. In other words, a computer is able to execute the encoded functions, regardless of whether the format is a disk or a signal.

These interim guidelines propose that such signal claims are ineligible for patent protection because they do not fall within any of the four statutory classes of Sec. 101. Public comment is sought for further evaluation of this question.

## CERTIFICATE OF SERVICE

The undersigned certifies that on July 25, 2006, I served two copies of this brief on the Solicitor of the United States Patent and Trademark Office, by commercial courier service (Federal Express) for next day delivery to Office of the Solicitor, Madison West 08C43, 600 Dulany Street, Alexandria VA

I also certify that on July 25, 2006, I filed the original and eleven copies of this brief at the Office of the Clerk, United States Court of Appeals for the Federal Circuit by commercial courier service (Federal Express) for next day delivery.

  
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## **CERTIFICATE OF COMPLIANCE**

This brief complies with the type-volume limitation of F.R.A.P. 32(a)(7)(B).

The brief contains 4734 words, excluding parts of the brief exempted by F.R.A.P. 32(a)(7)(B)(iii).

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July 7, 2006